

5.4 BIOLOGICAL RESOURCES

This section summarizes the biological resources within the project site, describes the regulatory framework for evaluating biological resources, and discusses potential impacts on biological resources as a result of implementation of the proposed project. Several Notice of Preparation (NOP) comment letters were received regarding biological resources. The letters are included in Appendix A of this Environmental Impact Report (EIR). The following documents were used to analyze the potential impacts from the proposed project:

- *Quarry Creek Master Plan, Biological Technical Report*, HELIX Environmental Planning, October 4, 2012 (Appendix H of this EIR);
- *City of Carlsbad Habitat Management Plan* (City of Carlsbad 2004); and
- *Former South Quarry Amended Reclamation Plan Draft and Final EIR (referred to herein as Reclamation Plan EIR)*, HELIX Environmental Planning Inc., September 2008 and February 2010, respectively.

The technical appendices are included on the attached CD found on the back cover of this EIR. Additional background information was also gathered from the City of Carlsbad General Plan and Zoning Ordinances.

5.4.1 Existing Conditions

A majority of the eastern 100-acre Reclamation parcel of the project site has been extensively modified by previous mining activities; however, the proposed project site also includes the undeveloped and relatively undisturbed Panhandle parcel, which is located adjacent to the Buena Vista Creek Ecological Reserve. Due to the historic mining activities, the project site's topography is irregular. The southern portion of the project site contains a steep north-facing cut slope traversed by concrete brow ditches, while the central and northern portions of the project site contain gently south-facing slopes with Buena Vista Creek running east to west.

Vegetation Communities

Seventeen vegetation communities occur within the project site, including: riparian forest, southern willow scrub, freshwater marsh, mule fat scrub, southern riparian woodland, baccharis scrub, non vegetated channel/streambed, open water, coastal sage chaparral scrub, Diegan coastal sage scrub (including disturbed), southern mixed chaparral, non-native grassland (including disturbed), eucalyptus woodland, non-native vegetation, disturbed habitat, and developed land. Table 5.4-1 summarizes the existing vegetation communities within the project site. Figure 5.4-1 illustrates the mapped vegetation within the project site.

A brief description of each community within the project site is provided below.

Riparian Forest

Approximately 9.39 acres of southern cottonwood riparian forest occurs within the northwestern portion of the project site. This riparian forest consists of tall, open, broad-leaved, winter-deciduous riparian species and is dominated by cottonwood species, with willow species comprising the main understory. Within the project site, this habitat also contains non-native species such as castor bean and fan palm. The non-native species are being removed as part of the quarry reclamation efforts.

Table 5.4-1. Summary of Existing Vegetation Communities within the Project Site

Vegetation Community	Acreage
Riparian forest	9.39
Southern riparian woodland	1.34
Riparian habitat ¹	0 (1.94 acres of restoration)
Southern willow scrub	1.34
Freshwater marsh	0.46
Mule fat scrub	0.43
Non vegetated channel/streambed	1.29
Disturbed wetland	0.01
Open water	0.38
Coastal sage chaparral scrub ¹	0.4
Diegan coastal sage scrub	37.8 (5.1 acres of restoration)
Baccharis scrub	6.2
Southern mixed chaparral	5.1
Native grassland	0.3
Non-native grassland	34.6
Eucalyptus woodland	0.1
Non-native vegetation	0.4
Disturbed habitat	16.5
Developed	33.5
Total	149.54 (156.58 with restoration acreage)

Source: HELIX Environmental Planning 2012.

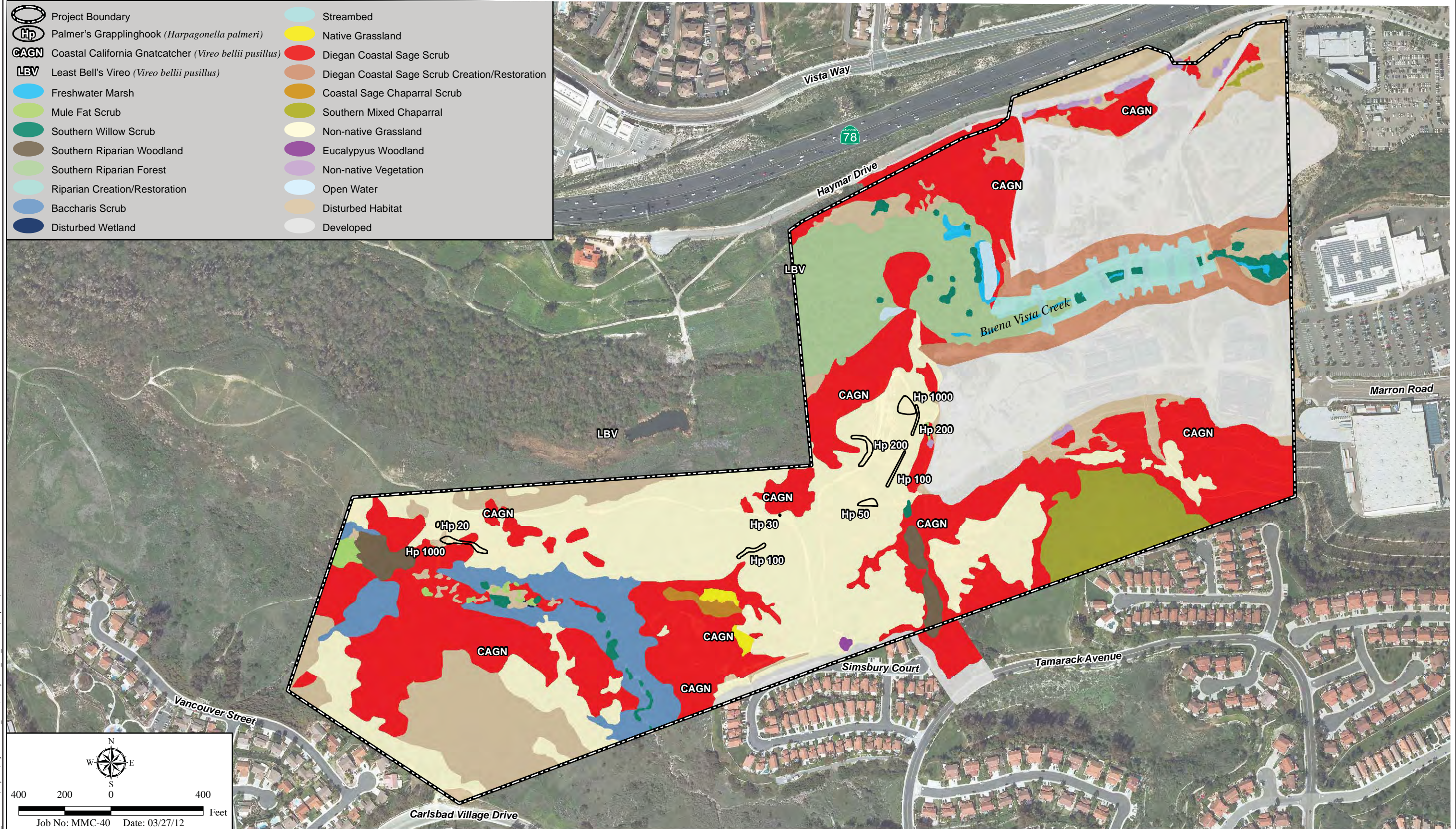
¹ Riparian habitat and Diegan coastal sage scrub will be created as part of the reclamation efforts of the old quarry.

Southern Riparian Woodland

Approximately 1.34 acres of southern riparian woodland occur along the south-north trending drainage in the south-central portion of the project site. Southern riparian woodland is tall, open, streamside communities dominated by facultative riparian trees that typically require water near the soil surface. The on-site habitat includes arborescent and shrubby willows in association with mule fat and other riparian species.

Southern Willow Scrub

Approximately 1.34 acres of southern willow scrub occurs at scattered locations across the project site. Southern willow scrub is a sensitive riparian vegetation community consisting of dense, broad-leaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat. This habitat typically occurs on loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. Dominant willow species in the southern willow scrub in the project site include arroyo willow and red willow. In addition, on-site southern willow scrub supports black willow, mule fat, Fremont cottonwood, and western ragweed. The on-site southern willow scrub has a large component of non-native plant species, including castor bean, giant reed, bristly ox-tongue, and California fan palm that will be removed as part of the quarry reclamation effort.



Existing Vegetation and Sensitive Resources
FIGURE 5.4-1

Riparian Habitat

The areas along Buena Vista Creek that are being restored to riparian vegetation as part of the quarry reclamation efforts were labeled “riparian habitat” as a general term, given that the actual habitat to be restored is still unknown. It is anticipated that these areas will be a combination of southern willow scrub and riparian forest habitats. Approximately 1.94 acres of riparian habitat occurs along Buena Vista Creek.

Freshwater Marsh

Approximately 0.46 acres of freshwater marsh occurs along Buena Vista Creek. Freshwater marsh is characterized by perennial monocots, such as cattail or bulrush. This vegetation community occurs in low, regularly flooded areas with little current. Vegetation in this community forms dense, monotypic stands. Freshwater marsh within the project site is mostly dominated by cattail.

Mule Fat Scrub

Approximately 0.43 acres of mule fat scrub occurs within the project site along the southwestern edge. Mule fat scrub is a depauperate, shrubby riparian scrub community dominated by mule fat and interspersed with small willows. This vegetation community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table. This community is typically maintained by frequent flooding, the absence of which would lead to a cottonwood or sycamore dominated riparian woodland or forest.

Baccharis Scrub

Approximately 6.2 acres of baccharis scrub occurs adjacent to the drainage that runs southeast-northwest in the central portion of the Panhandle parcel. This community is dominated by *Baccharis* species and typically occurs in low-lying areas. This vegetation community is known as a secondary pioneer plant in communities such as coastal sage scrub and chaparral. Within the project site, baccharis scrub is dominated by coyote bush.

Non-vegetated Channel/Streambed

Approximately 1.29 acres of non-vegetated channel/streambed occurs within the project site. Portions of Buena Vista Creek (drop structures) and other side drainages are not vegetated.

Open Water

Two open water ponds occur on the project site in the northwestern portion, totaling approximately 0.38 acres.

Coastal Sage-Chaparral Scrub

Approximately 0.4 acres of coastal sage-chaparral scrub occurs within the central portion of the project site, within the Panhandle parcel. Coastal sage-chaparral scrub is a mixture of sclerophyllous chaparral shrubs and drought-deciduous sage scrub species regarded as an ecotone (transition) between two vegetation communities. This community contains floristic elements of both coastal sage and chaparral scrub, such as California sagebrush, California buckwheat, laurel sumac, toyon, and lemonadeberry.

Diegan Coastal Sage Scrub (Including Disturbed)

Approximately 42.9 acres of Diegan coastal sage scrub, including disturbed, occur within the project site. Within the project site, this vegetation community consists of 27.7 acres of existing Diegan coastal sage scrub, 10.1 acres of disturbed Diegan coastal sage scrub, and 5.1 acres of creation/restoration. This vegetation community occurs primarily in the northwestern portion of the project site, in the Panhandle parcel, and along the north-facing slope, along the southern boundary.

The disturbed Diegan coastal sage scrub occurs in patches within the Reclamation parcel, along its edges, and on portions of the Panhandle parcel. These patches contain native coastal sage scrub species, such as California buckwheat and California sagebrush, and non-native species such as mustard and tree tobacco. Other portions of the project site where coastal sage scrub occurs includes the revegetated cut slopes in the southern portion of the project site that contains mostly small and sparse California buckwheat. The slope in the west-central portion of the project site is dominated by dense lemonadeberry.

Southern Mixed Chaparral

Approximately 5.1 acres of southern mixed chaparral occurs along the southern boundary of the north-facing slope. This vegetation community is composed of broad-leaved sclerophyllous shrubs that are generally deep rooted and can grow to about 15 feet tall. Southern mixed chaparral within the project site is dominated by chamise, with lesser amounts of mission Manzanita and holly-leaf redberry.

Native Grassland (Including Disturbed)

Approximately 0.3 acres of native grassland, including 0.2 acres of disturbed, occur within the eastern portion of the Panhandle parcel. This habitat is composed of a mix of native and non-native grasses, herbs, and forbs. Approximately 20 percent of this vegetation community is native species that include needle grass, blue-eyed grass, and poppy.

Non-native Grassland (Including Disturbed)

Approximately 34.6 acres of non-native grassland, including 0.1 acres of disturbed, occur primarily in the Panhandle parcel. Non-native grassland is a dense to sparse cover of annual grasses, often associated with native annual forbs. This vegetation community occurs on gradual slopes with deep, fine-textured, usually clay soils. Typical invasive species such as black mustard, foxtail chess, and common ripgut grass are common within non-native grassland, but has a high proportion of non-native forbs.

Eucalyptus Woodland

Approximately 0.1 acres of eucalyptus woodland occurs within the project site. Eucalyptus is an introduced species that is often planted for wind blocking, ornamental, or hardwood production purposes. Most groves are monotypic and the understory within well-established groves is usually sparse due to the allelopathic nature of the abundant leaf and bark litter. If enough moisture exists, this species becomes naturalized and is able to reproduce and expand its range. The sparse understory offers only limited wildlife habitat; however, these woodlands would provide nesting sites for raptors.

Non-native Vegetation

Approximately 0.4 acres of non-native vegetation occurs along the northern boundary of the project site and 0.02 acres occurs within the off-site impact areas. Non-native vegetation is defined as areas of cultivated or landscaping plants that have naturalized into otherwise native habitat areas or that are remnants of previously cultivated land uses. These plants occur without supplemental irrigation and may spread, supplanting native plant species.

Disturbed Habitat

Approximately 16.5 acres of disturbed habitat occurs within the project site and 0.7 acres occurs within the off-site impact areas. Disturbed habitat consists of land that has experienced prior grading, dumping or other human activity and provides virtually no wildlife value. It supports limited vegetation, generally non-native annual forbs and some grasses. Disturbed habitat within the project site is associated with the areas of past mining activity.

Developed Land

Approximately 33.5 acres of developed land occurs within the project site and 1.6 acres occurs within the off-site impact areas. Developed land is considered the areas where permanent structures and/or pavement have been placed, or where landscaping is clearly maintained, preventing growth of the native vegetation. Developed land occurs over the entire portion of the Reclamation parcel, with the exception of the Buena Vista Creek channel and side slopes that are being revegetated.

Jurisdictional Areas

Non-wetland and wetland areas are considered sensitive by local (City of Carlsbad), state (California Department of Fish and Game [CDFG]), and federal (U.S. Army Corps of Engineers [USACE]) agencies. These areas are regulated by the USACE under Section 404 of the Clean Water Act (CWA) and by the CDFG under Section 1602 of the California Fish and Game Code. Compliance with Section 401 of the CWA (Water Quality Certification) is also required as part of the Section 404 CWA permit approval.

United States Army Corps of Engineers

Within the project site, USACE jurisdictional areas occur along Buena Vista Creek, on a south-north tributary drainage in the south-central portion of the project site, and a southeast-northwest trending drainage in the Panhandle parcel that includes several subdrainages. After restoration, Buena Vista Creek will support high quality riparian habitat throughout its length. The south-north drainage is fed by urban runoff and terminates at the outfall structure just south of the project site boundary. The third drainage is part of a larger tributary area heading off-site to the south. The area in the northwestern portion of the project site was not delineated but contains USACE jurisdictional areas.

A total of 2.8 acres of USACE jurisdictional wetlands occur within the project site, including 0.14 acres of southern riparian forest, 0.62 acres of southern willow scrub, 0.1 acres of freshwater marsh, and 1.94 acres of riparian habitat restoration. Additionally, 2.21 acres of USACE jurisdictional non-wetland habitat consisting of non-vegetated channel occur within the project site. The location of existing USACE jurisdictional areas, and in the context of project impacts, is depicted on Figure 5.4-3 provided later in this section.

California Department of Fish and Game

The CDFG jurisdictional areas include all the areas under USACE jurisdiction, as well as other areas with wetland or riparian vegetation that may not have wetland hydrology or hydric soils. The project site supports 6.78 acres of CDFG jurisdictional areas, including 0.14 acres of southern riparian forest, 1.34 acres of southern riparian woodland, 1.01 acres of southern willow scrub, 0.1 acres of freshwater marsh, 0.43 acres of mule fat scrub, 0.01 acres of disturbed wetland, 1.79 acres of streambed, 1.94 acres of riparian habitat restoration, and 0.02 acres of non-native vegetation. The location of existing CDFG jurisdictional areas, and in the context of project impacts, is depicted on Figure 5.4-4 provided later in this section.

Sensitive Flora and Fauna

Per the City of Carlsbad, sensitive species are those considered unusual or limited in that the species are: (1) included on generally accepted and documented lists of plants and animals of endangered, threatened, candidate or of special concern by the Federal Government or State of California; (2) Carlsbad Habitat Management Plan (HMP) Covered Species; (3) Carlsbad HMP Narrow Endemic Animal Species; (4) Carlsbad HMP Narrow Endemic Plant Species; or (5) those species that meet the definition of “Rare or Endangered Species” under the State *CEQA Guidelines*. Figure 5.4-1 identifies the location of on-site sensitive plant and animal species observed during field surveys.

Sensitive Plants

For the purposes of this EIR, sensitive plants include those listed by U.S. Fish and Wildlife Service (USFWS), CDFG, the California Native Plant Society (CNPS), and those considered to be covered and/or narrow endemic species in the City’s HMP. A total of 109 plant species were observed and recorded during biological investigations of the project site and are included in the Biological Technical Report (BTR) in Appendix H of this EIR.

The majority of observed plants were non-native and none were listed by USFWS or CDFG. One CNPS listed sensitive plant, Palmer's grapplinghook (CNPS List 4.2), was observed during surveys conducted in 2008 and 2011. However, this plant is not federally or state-listed nor is it covered in the City’s HMP.

According to CNPS, the species needs monitoring for changes in population status and is considered fairly endangered in California (20 to 80 percent occurrences threatened). Suitable habitat consists of clay soils in annual grasslands and coastal sage scrub. Approximately 1,600 individuals were observed in 2008, and 2,750 individuals were observed in 2011 in the western portion of the project site (see Figure 5.4-1).

A number of additional sensitive species are known from the region, but were not detected on the project site during surveys. Table 5.4-2 provides a list of sensitive species with a potential to occur within the project site.

5.4 Biological Resources

Table 5.4-2. Special Status Floral Species with Potential to Occur On-Site

Species Name	Federal Status	California Status	CNPS Status	Carlsbad HMP and MHCP	Potential to Occur
San Diego thornmint	FE	SE	List 1B.1	Covered	High. Occurs in grassy openings in chaparral or sage scrub. Preferred habitat is friable or broken clay soils. Clay soils present in the Panhandle parcel of project site. Not observed during project surveys.
San Diego ambrosia	FE	n/a	List 1B.1	Covered	Low. No known populations in vicinity of project site.
Coastal dunes milk-vetch	FE	SE	List 1B.1	N/A	None. Occurs in coastal dune situations. No coastal dunes on-site.
Thread-leaved brodiaea	FT	SE	List 1B.1	Covered	High. Prefers clay soils, which are present in the Panhandle parcel of project site. Not observed during surveys.
Orcutt's brodiaea	N/A	N/A	List 1B/1	Covered	Moderate. Clay soils on-site could support this species. Not observed during focused surveys.
Smooth tarplant	N/A	N/A	List 1B.1	N/A	Very low. Occurs in grasslands, meadows and alkali meadows. A single specimen has been collected in Oceanside, but all other observations are from sites well northeast of the project vicinity. Soils not appropriate.
Orcutt's pincushion	N/A	N/A	List 1B.1	N/A	Very low. Occurs in open, sandy coastal sage scrub and coastal bluff scrub. Project site is likely too far inland to support this species. Habitat on-site is only marginally suitable.
Summer holly	N/A	N/A	List 1B.2	Covered	Low. Would occur in southern mixed chaparral. None observed on-site.
Sea Dahlia	N/A	N/A	List 2.2	N/A	None. Occurs on sandstone within coastal bluff scrub or coastal sage scrub near the ocean. Project site is likely too far inland, and habitat on-site is not suitable to support this species.
Blochman's dudleya	N/A	N/A	List 1B.1	Covered	Very low. Occurs in coastal bluff scrub and coastal sage scrub or open chamise chaparral near the ocean. Project site is likely too far inland to support this species.
Sticky dudleya	N/A	N/A	List 1B.2	N/A	Low. Occurs in chaparral and mesic coastal sage scrub on north-facing slopes. Not reported in the project vicinity.
Coulter's goldfields	N/A	N/A	List 1B.1	N/A	None. Occurs in salt marsh communities near the coast, as well as on the periphery of vernal pools. Suitable habitat does not occur on-site.
Nuttall's lotus	N/A	N/A	List 1B.1	Covered	None. Occurs on coastal dunes and in coastal sage scrub with sandy or riverwash soils. Coastal sage scrub on-site is not suitable to support this species.
San Diego goldenstar	N/A	N/A	List 1B.1	n/a	Moderate. Occurs in clay soils which are present in the Panhandle parcel of the project site. Not observed during focused surveys and therefore not expected.

5.4 Biological Resources

Species Name	Federal Status	California Status	CNPS Status	Carlsbad HMP and MHCP	Potential to Occur
Coast woolly-heads	N/A	N/A	List 1B.2	n/a	None. Occurs in coastal dune communities, which do not occur on-site.
Parry's tetracoccus	N/A	N/A	List 1B.2	Covered	Very low. Typically occurs in chaparral. None detected on-site.

Source: HELIX Environmental Planning 2012.

Notes:

Federal and State Status: FE = federally listed endangered; FT = federally listed threatened; SE = State-listed endangered; ST = State-listed threatened; SSC = State species of special concern

Carlsbad Habitat Management Plan (HMP) and Multiple Habitat Conservation Program (MHCP) Covered Species: Species listed as HMP/MHCP covered species indicate that these species would receive formal protection and take authorization upon approval of the HMP/MHCP under the state and federal endangered species acts.

CNPS Codes:

Lists

1A = Presumed extinct.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2 = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Distribution, endangerment, ecology, and/or taxonomic information needed. Some eligible for state listing.

4 = A watch list for species of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

List/Threat Code Extensions

1 = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

2 = Fairly endangered in California (20 to 80 percent occurrences threatened)

3 = Not very endangered in California (less than 20 percent of occurrences threatened, or no current threats known)

A CA Endemic entry corresponds to those taxa that only occur in California.

*All List 1A (presumed extinct in California) and some List 3 (need more information; a review list) plants lacking threat information receive no threat code extension. Threat Code guidelines represent only a starting point in threat level assessment. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Code.

Sensitive Animals

Sensitive animal species include those listed by USFWS, CDFG's California Natural Diversity Database (CNDDB), and those considered to be covered species and/or narrow endemic species under the HMP. A total of 72 animal species (including two listed species) were observed/detected within the project site boundaries and include: 13 butterfly, one amphibian, one reptile, 46 bird, and four mammal species. The complete list is included in Appendix B of the BTR prepared for the proposed project (Appendix H of this EIR).

Nine of the 72 animal species observed within the project site are considered sensitive: orange-throated whiptail, least Bell's vireo, coastal California gnatcatcher, white-tailed kite, yellow warbler, northern harrier, yellow-breasted chat, red-shouldered hawk, and San Diego black-tailed jackrabbit (see Figure 5.4-1). Additionally, Cooper's hawk and grasshopper sparrow were observed off-site to the west. Focused surveys were conducted for the southwestern willow flycatcher, burrowing owl, and arroyo toad. None were observed on-site during the focused surveys. Additionally, directed surveys for southwestern pond turtle were conducted and determined to be negative. A more detailed discussion for species observed on-site is provided below.

Least Bell's Vireo (LBV): Least Bell's vireo is a federally and state endangered species and is covered under the Carlsbad HMP and Multiple Habitat Conservation Program (MHCP). Least Bell's vireo is observed throughout much of San Diego County in the breeding season but in smaller numbers in foothills and mountains. It prefers mature riparian scrub and woodland. Focused surveys were conducted and one individual was observed in the southern riparian forest at the western edge of the project site, and one individual was heard off-site to the north of the Panhandle parcel (see Figure 5.4-1).

Coastal California gnatcatcher (CAGN): Coastal California gnatcatcher is federally threatened and a California species of special concern. It is covered under the Carlsbad HMP and MHCP. In San Diego County, coastal California gnatcatcher occurs throughout the coastal lowlands. It prefers coastal sage scrub habitat. Focused surveys were conducted and ten pairs of gnatcatchers were observed on-site at various locations (see Figure 5.4-1).

Red-shouldered hawk: Red-shouldered hawk is not a federally or state-listed species. Its habitat consists of riparian woodland, oak woodland, orchards, eucalyptus groves, or other areas with tall trees. Red-shouldered hawk was observed flying over the southern and western portions of the project site.

Northern harrier: Northern harrier is a California species of special concern and is covered under the MHCP. In San Diego County, distribution is primarily scattered throughout the lowlands but can also be observed in the foothills, mountains, and desert. Its preferred habitat is open grassland and marsh. Northern harrier was observed flying over the project site.

Yellow-breasted chat: Yellow-breasted chat is a California species of special concern and is covered under the Carlsbad HMP and MHCP. Yellow-breasted chat occurs throughout San Diego County's coastal lowlands in the breeding season. Its preferred habitat is mature riparian woodland. Yellow-breasted chat was observed in and adjacent to the riparian habitat on the western portion of the project site during multiple surveys in 2005, 2008, and 2011.

Yellow warbler: Yellow warbler is a California special status species. Yellow warbler occurs throughout much of San Diego County during the breeding season with rare sightings in winter. Its preferred habitat is riparian woodland. Yellow warbler was observed in the riparian habitat near the western edge of the project site.

Orange-throated whiptail: Orange-throated whiptail is a California special status species and is covered under the Carlsbad HMP and MHCP. Orange-throated whiptail occurs in southern Orange County and southern San Bernardino County, south through Baja California. Its preferred habitat is coastal sage scrub, chaparral, edges of riparian woodlands, and washes, but can also be found in weedy, disturbed areas adjacent to these habitats. Important habitat requirements include open, sunny areas, shaded areas, and abundant insect prey base, particularly termites. Orange-throated whiptail was observed in the sage scrub in western portion of the project site.

White-tailed kite: White-tailed kite is not federally or state-listed. This bird breeds in the Pacific U.S. and winters in South America as far south as Chile. Its preferred nesting habitat is typically in riparian or oak woodlands adjacent to grasslands where small mammals are hunted. Three individuals were observed once near the pond in the north-central portion of the project site in 2003; one individual was observed in southern willow scrub near the western property boundary in 1999.

San Diego black-tailed jackrabbit: San Diego black-tailed jackrabbit is a California special status species. It is known to occur in southern Santa Barbara County to San Quintin, Baja. Localities on the eastern edge of its range include Jacumba and San Felipe Valley in San Diego County. Its preferred habitat is primarily open habitats, including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present. San Diego black-tailed jackrabbit was observed at two locations within non-native grassland in the western portion of the project site.

5.4 Biological Resources

A number of additional sensitive animal species are known from the region, but were not detected on the project site during surveys. Table 5.4-3 provides a list of sensitive species with a potential to occur within the project site.

Table 5.4-3. Special Status Fauna Species with Potential to Occur On-site

Species Name	Federal Status	California Status	Carlsbad HMP and MHCP	Potential to Occur
<i>Butterflies</i>				
Quino checkerspot butterfly	FE	N/A	Covered	None. Larval host plant, dot-seed plantain, not observed on-site. No recent observations have occurred in northwestern San Diego County.
Hermes Copper	N/A	N/A	Covered	Very low. Habitat consists of southern mixed chaparral and coastal sage scrub with mature specimens of its larval host plant, spiny redberry. No spiny redberry was observed on-site.
<i>Amphibian</i>				
Arroyo toad	FE	N/A	Covered	None. Prefers riparian areas with open canopy and slow-moving water. Arroyo toad was not detected during previous focused surveys.
<i>Reptiles</i>				
Silvery legless lizard	N/A	SSC	N/A	Low to moderate. Prefers fine, sandy soils, which are not prevalent on-site.
Southwestern pond turtle	N/A	SSC	Covered	Low. Is an almost entirely aquatic species. Occurs in freshwater marshes, creeks, ponds, rivers, and streams. Was not observed on-site during focused surveys.
Coastal whiptail	N/A	SSC	N/A	Moderate. Occurs in grassland and coastal sage scrub habitats, which is found on-site.
Red-diamond rattlesnake	N/A	SSC	N/A	Low to moderate. Common species in coastal sage scrub, typically in vicinity of rock outcrops. Appropriate habitat is limited on-site.
Coronado Island skink	N/A	SSC	N/A	Moderate. Found in coastal sage scrub and areas with sufficient leaf litter to provide shelter
Coastal rosy boa	N/A	SSC	N/A	Low to moderate. Commonly occurs in coastal sage scrub with rock outcrops, which is limited on-site.
Coast horned lizard	N/A	SSC	Covered	Moderate. Its favored prey is the harvester ant, which is likely present on-site.
Coast patch-nosed snake	N/A	SSC	N/A	Moderate. Found among preferred habitats of whiptails (prey).
<i>Birds</i>				
Cooper's hawk	N/A	SSC	Covered	High. Observed off-site to the west along Buena Vista Creek. It may forage in the open areas of the project site.
Southern California rufous-crowned sparrow	N/A	SSC	Covered	Low. Found in coastal sage scrub; however, none were observed on-site during surveys.

5.4 Biological Resources

Species Name	Federal Status	California Status	Carlsbad HMP and MHCP	Potential to Occur
Grasshopper sparrow	N/A	SSC	Covered	High. Restricted to grasslands, particularly native, dominated by bunchgrasses. Non-native grassland is abundant in the western portion of the project site; however, this species was not detected during the surveys. Reported in similar habitat off-site to the west.
Bell's sage sparrow	N/A	SSC	Covered	Low. Found in coastal sage scrub and chaparral; however, was not observed during surveys.
Burrowing Owl	N/A	SSC	Covered	Not expected. Prefers grassland and agricultural lands. Was not observed during focused surveys.
Southwestern willow flycatcher	FE	SE	Covered	Low to not expected. Nests in tall, dense riparian vegetation. Not detected during focused surveys.
Mammals				
San Diego pocket mouse	N/A	SSC	Covered	Low. Prefers open, sandy land with weeds, which occurs on-site but in very small patches.
San Diego desert woodrat	N/A	SSC	N/A	Low. Nests typically observed if present. Possible is present in heavily vegetated areas.
Southern grasshopper mouse	N/A	SSC	Covered	Low. Typically found in more arid habitats than those found on-site.
Pacific pocket mouse	FE	N/A	Covered	Very low. Project site too far inland and does not support suitable habitat.

Source: HELIX Environmental Planning 2012.

Legend: FE = Federally endangered; SSC = State Species of Special Concern; N/A = Not Applicable.

Wildlife Corridors

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Local wildlife corridors allow animal access to resources such as food, water, and shelter within the framework of their daily routine. For example, animals can use these corridors to travel between their riparian breeding habitats and their upland burrowing habitats. Regional corridors provide these functions over a larger scale and link two or more large habitat areas allowing the dispersal of organisms and the consequent mixing of genes between populations.

Local Corridors

Buena Vista Creek, within the central and eastern portions of the project site, has been heavily degraded by the quarry operation over the years, and is currently being restored to high quality wetland and upland habitat, increasing its value as a local wildlife corridor. The creek becomes heavily constrained upstream of College Boulevard and wildlife movement to the east along Buena Vista Creek has very limited value. The south-north trending drainage in the south-central portion of the project site has also been heavily impacted by the quarry operation. Wildlife movement is most likely to occur to and from the western portion of the project site to the undeveloped lands to the west and south, and to some degree to the slopes to the southeast.

Regional Corridors

The MHCP (AMEC et al. 2003) places portions of the area westerly of the project site within the Biological Core and Linkage Area, which contains “all large contiguous areas of habitat, all areas supporting major and minor species populations or habitat areas, and all important functional linkages and movement corridors between them” within the MHCP. The generalized boundaries of this regional corridor are shown to connect with open space through the southwestern portion of the property between land to the south, and ultimately with the stepping stone linkage through Oceanside north of SR-78. The preserve system generally includes areas within the south slopes and along Buena Vista Creek, with connections to the west. The areas further to the west are identified in the Carlsbad HMP (City of Carlsbad 2004) as a core habitat area and are connected with Buena Vista Lagoon to the west, although this connection is heavily constrained by SR-78 and existing shopping centers. Buena Vista Creek continues off-site to the east through a constrained corridor. The area to the east is not considered a regional wildlife corridor.

5.4.2 Regulatory Setting

Federal Regulations

Endangered Species Act

The federal Endangered Species Act (ESA) provides protection for endangered and threatened species and requires conservation of designated species’ critical habitats. An “endangered” species is a species in danger of extinction throughout all or a significant portion of its range. A “threatened” species is one that is likely to become “endangered” in the foreseeable future without further protection. Other special-status species include “proposed,” “candidate,” and “species of concern.” Proposed species are those that have been officially proposed in the Federal Register for listing as threatened or endangered. Candidate species are those for which sufficient information is available to propose listing as endangered or threatened. “Species of concern” are species for which not enough scientific information has been gathered to support a listing proposal, but which still may be appropriate for listing in the future after further study. A “delisted” species is one whose population has reached its recovery goal and is no longer in jeopardy.

Administered by the USFWS, the federal ESA provides the legal framework for the listing and protection of species that are identified as being endangered or threatened with extinction. Actions that jeopardize such species and their habitats are considered a “take” under the federal ESA. Sections 7 and 10(a) of the federal ESA regulate actions that could harm or harass endangered or threatened species. Section 10(a) allows issuance of permits for “incidental” take of endangered or threatened species. The term “incidental” applies if the taking of the listed species is secondary to, and not the purpose of, an otherwise lawful activity. A conservation plan demonstrating how the take will be minimized and what steps taken would ensure the listed species’ survival must be submitted for the issuance of Section 10(a) permits. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. A biological assessment is required for any major activity if it may affect listed species. The City of Carlsbad’s HMP has been formally approved and provides take authorization under Section 10(a).

Fish and Wildlife Coordination Act (16 USC §661-667E)

The Fish and Wildlife Coordination Act of March 10, 1934, authorized the Secretaries of Agriculture and Commerce to assist and cooperate with federal and state agencies to protect, rear, stock, and increase the supply of game and fur-bearing animals, and to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife. Amendments to the act require consultation with the USFWS, National Marine Fisheries Service (NMFS), and state agencies responsible for fish and wildlife resources for all proposed federal undertakings and non-federal actions needing a federal permit or license that would impound, divert, deepen, or otherwise control or modify a stream or water body, and to make mitigation and enhancement recommendations to the involved federal agency.

Migratory Bird Treaty Act (16 USC §703-712)

The Migratory Bird Treaty Act (MBTA) provides special protection for migratory families of birds (i.e., those avian species that winter south of the U.S. but breed within the U.S.) by regulating hunting or trade. The Act prohibits anyone to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 Code of Federal Regulations (CFR) 10, including feathers or other parts nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). “Take” is defined in 50 CFR 10.12 as “Take means to pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect.” Only “collect” applies to nests (USFWS 2003). Such activity is potentially punishable by fines and/or imprisonment. The use of families as opposed to individual species within the Act means that numerous non-migratory birds are extended protection under the MBTA. Most nesting birds are covered by the MBTA.

Clean Water Act (33 USC §1251-1376)

The CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to jurisdictional waters (including wetland/riparian areas) of the U.S. must obtain a state water quality certification that the discharge complies with other provisions of CWA. The Regional Water Quality Control Boards (RWQCBs) administer the certification program in California.

Section 402 is regulated by the U.S. Environmental Protection Agency (USEPA) and establishes a permitting system for the discharge of any pollutant (except dredge or fill material) into waters of the U.S. It establishes a framework for regulating municipal and industrial storm water discharges under the National Pollutant Discharge Elimination System (NPDES) program. The RWQCBs also administer the NPDES permits for construction activities and operations.

Section 404 establishes a permit program administered by the USACE regulating the discharge of dredge or fill material into waters of the U.S., including wetlands, and jurisdictional non-wetland waters. The USACE has permit authority derived from Section 404 of the CWA (33 CFR Parts 320-330). The permit review process includes an assessment of potential adverse impacts to wetlands and streambed habitats and determination of any required mitigation measures. As a condition of the 404 permitting process, a 401 Water Quality Certification or waiver is required from the RWQCB. Where federally listed species may be affected, a Section 7 consultation with the USFWS under the federal ESA is required. Compliance with Section 106 of the National Historic Preservation Act must also be met through coordination with the State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP), and other interested parties.

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the federal ESA and is administered by the CDFG. State lead agencies are required to consult with CDFG to ensure that any action it undertakes is not likely to jeopardize the continued existence of any state-listed endangered, threatened, or candidate plant and animal species. The take of a state endangered species is approved in a manner similar to that of the federal act, with a take permit being granted through Section 2081 of the CESA. Early consultation is emphasized to avoid potential impacts to sensitive species and to develop appropriate mitigation planning to offset project caused losses of listed species populations and their essential habitats. In addition to listed species, the CDFG also maintains a list of “Species of Special Concern,” including species whose breeding populations in California may face local extirpation. To avoid future listing of these Species of Special Concern as endangered or threatened, the CDFG recommends consideration of these species (although they do not as yet carry legal status) during analysis of the impacts of proposed projects.

California Fish and Game Code, §1600 et seq.

The CDFG Code §1600 requires any person, state, or local government agency or public utility proposing a project that may impact a river, stream or lake to notify the CDFG. In addition, to protect state-listed species under CESA, the CDFG also has surface water jurisdiction to protect wildlife values and native plant resources associated with waters of the state. CDFG requires a Section 1602 Streambed Alteration Agreement (SAA) for work that may impact waters of the state. Required conditions within the SAA are intended to address potentially significant adverse impacts within CDFG jurisdictional limits.

Local Regulations

Multiple Habitat Conservation Program

The MHCP is a comprehensive, multiple jurisdictional planning program designed to create, manage, and monitor an ecosystem preserve in northwestern San Diego County. It is one of several large, multiple jurisdictional habitat planning efforts in San Diego County, each of which constitutes a “subregional” plan under the State of California’s Natural Community Conservation Planning (NCCP) Act of 1991. The MHCP preserve system is intended to protect viable populations of native plant and animal species and their habitats in perpetuity, while accommodating continued economic development and quality of life for residents of North County.

The MHCP subregion encompasses the seven incorporated cities of northwestern San Diego County (Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista). These jurisdictions will implement their portions of the MHCP plan through citywide “subarea” plans, which describe the specific policies each city will institute for the MHCP.

City of Carlsbad Habitat Management Plan

The project would be subject to regulation under the Carlsbad HMP (City of Carlsbad 2004). The Carlsbad HMP defines Hardline Preserve Areas intended to conserve sensitive habitats within an open space system. The entire project site includes designated Hardline Preserve Areas, as well as Hardline Development Areas. The objective of the Hardline Preserve through this area is to maintain the Buena

Vista Creek channel through the central portion of the project site, and to preserve the southeast-northwest trending drainage and adjacent upland areas in the Panhandle parcel.

City of Carlsbad General Plan, Open Space and Conservation Element

The Open Space and Conservation Element of the General Plan establishes policies for the development of a comprehensive, connected open space system and for the protection and conservation of the City's natural and historic resources. The Open Space and Conservation Element contains numerous goals, objectives and policies in order to protect and conserve sensitive plant and animal life species. Section 5.10 of this EIR outlines these policies.

5.4.3 Project Impacts

5.4.3.1 Thresholds of Significance

As defined in Appendix G of the *CEQA Guidelines*, project impacts to biological resources would be considered significant if the project was determined to:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors; or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as the HMP for Natural Communities in the City of Carlsbad, a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local (i.e., HMP) regional, or state habitat conservation plan.

HMP Thresholds of Significance

The Carlsbad HMP divides vegetation communities into six Habitat Groups: A through F. The Habitat Groups are defined as follows:

- Group A: Coastal salt marsh, alkali marsh, freshwater marsh, estuarine, salt pan/mudflats, riparian forest, riparian woodland, riparian scrub, vernal pools, disturbed wetlands, flood channel, freshwater Engelmann oak woodland, coast live oak woodland.
- Group B: Beach, southern coastal bluff scrub, maritime succulent scrub, southern maritime chaparral, native grassland.
- Group C: Gnatcatcher-occupied coastal sage scrub.

- Group D: Unoccupied coastal sage scrub, coastal sage/chaparral mix, chaparral (excluding southern maritime chaparral).
- Group E: Annual (non-native) grassland.
- Group F: Disturbed land, eucalyptus, agricultural lands.

For the purposes of analyzing impacts under the City's HMP, a significant biological resources impact has been assessed if implementation of the proposed project would result in:

- Inconsistency with the adopted Carlsbad HMP;
- Impacts to Habitat Groups A-F;
- Any impacts to federally or state listed species, including impacts to occupied habitats; or
- Loss of a "significant population" of a sensitive species; where the loss would substantially reduce the likelihood of the survival and recovery or restrict the range of the species.

Impacts to non-sensitive habitats are generally not considered significant. If, however, the densities of sensitive species within the habitat were sufficiently high or the habitat functioned as an important wildlife movement corridor, habitat linkage, or crucial foraging habitat, impacts could be considered significant.

5.4.3.2 Environmental Impacts

This section describes potential direct and indirect impacts associated with the proposed project. Direct impacts are described based on the grading limits and associated brush management limits. Indirect impacts include project impacts such as noise and lighting that do not directly remove vegetation and sensitive resources, but may indirectly affect the long-term viability of sensitive species on-site. The magnitude of an indirect impact can be the same as a direct impact; however, the effect usually takes a longer time to become apparent.

5.4.3.3 Direct Impacts

Vegetation Communities

Implementation of the proposed project would result in impacts to wetland resources, including 0.34 acres of southern riparian woodland, 0.06 acres of southern willow scrub, and 0.02 acres of mule fat scrub. The proposed project would also impact 46.1 acres of upland vegetation communities, including 13.1 acres of Diegan coastal sage scrub (0.5 acre occurs off-site), 1.1 acres of baccharis scrub, 0.2 acres of native grassland, 0.2 acres of coastal sage chaparral scrub, 0.1 acres of southern mixed chaparral, 24.6 acres of non-native grassland, 6.3 acres of disturbed habitat (0.7 acre occurs off-site), 0.4 acres of non-native vegetation (0.02 acre occurs off-site), and 0.1 acres of eucalyptus woodland. The project would also "impact" 33.8 acres of developed land, including 1.6 acres in the City of Oceanside. Impacts to the vegetation communities are illustrated on Figure 5.4-2 and summarized in Table 5.4-4. Impacts to southern riparian woodland, southern willow scrub, mule fat scrub, unvegetated channel, Diegan coastal sage scrub, baccharis scrub, native grassland, coastal sage chaparral scrub, southern mixed chaparral, non-native grassland, and disturbed habitat are considered significant and require mitigation as outlined in Section 5.4.5 below. Implementation of Mitigation Measures BIO-1 and BIO-2 would reduce the impact to vegetation communities to a level less than significant.

Table 5.4-4. Summary of Impacts to Vegetation Communities

Vegetation Community	HMP Code	Existing Acreage*	On-Site Impacts	Off-Site Impacts	Preservation (acreage)
Riparian forest	A	9.39	0	0	9.39
Southern riparian woodland	A	1.34	0.34	0	1.0
Riparian habitat**	A	1.94	0	0	1.94
Southern willow scrub	A	1.34	0.06	0	1.28
Freshwater marsh	A	0.46	0	0	0.46
Mule fat scrub	A	0.43	0.02	0	0.41
Non vegetated channel/streambed	A	1.29	0	0	1.29
Disturbed wetland	A	0.01	0	0	0.01
Open water	A	0.38	0	0	0.38
Coastal sage chaparral scrub	D	0.4	0.2	0	0.2
Diegan coastal sage scrub	C	42.9	12.6	0.5	29.8
Baccharis scrub	D	6.2	1.1	0	5.1
Southern mixed chaparral	D	5.1	0.1	0	5.0
Native grassland	B	0.3	0.2	0	0.1
Non-native grassland	E	34.6	24.6	0	10.0
Eucalyptus woodland	F	0.1	0.1	0	0
Non-native vegetation	F	0.4	0.38	.02	0
Disturbed habitat	F	16.5	5.6	0.7	10.20
Developed	N/A	35.12	32.2	1.6	1.3
Total		158.20	77.5	2.82	77.88

Source: HELIX Environmental Planning 2012.

Notes: *Includes on-site and off-site areas.

**Riparian habitat creation will be composed of one or more of the other riparian vegetation communities present on-site.

+25.4 acres is available for project mitigation. The 5.1 acres of creation habitat was mitigation for the Reclamation Plan.

Jurisdictional Areas

The proposed project would cause permanent impacts to both USACE and CDFG jurisdictional areas. Table 5.4-5 summarizes these impacts. As shown in Table 5.4-5, the proposed project would cause permanent impacts to 0.21 acres of USACE jurisdictional areas consisting of unvegetated channel/streambed. Figures 5.4-3 and 5.4-4 illustrate the impacts to USACE and CDFG jurisdictional areas, respectively. Impacts to CDFG jurisdictional areas would total 0.47 acres, including 0.34 acres of southern riparian woodland, 0.04 acres of southern willow scrub, 0.02 acres of mule fat scrub, and 0.07 acres of unvegetated channel/streambed. These impacts are considered significant and require mitigation as outlined in Section 5.4.5 below. Implementation of Mitigation Measure BIO-3 would reduce the impacts to jurisdictional areas to a level less than significant.

Table 5.4-5. Summary of Impacts to Jurisdictional Areas

Vegetation Community	Existing Acreage*	Impacts
<i>USACE Wetlands</i>		
Southern riparian forest	0.14	0
Riparian habitat	1.94	0
Southern willow scrub	0.62	0
Freshwater marsh	0.1	0
<i>USACE Non-wetland waters</i>		
Non-vegetated channel/streambed	2.21	0.21
Total USACE Impacts	5.01	0.21
<i>CDFG Vegetation Communities</i>		
Southern riparian forest	0.14	0
Southern riparian woodland	1.34	0.34
Riparian habitat	1.94	0
Southern willow scrub	1.01	0.04
Freshwater marsh	0.1	0
Disturbed wetland	0.01	0
Mule fat scrub	0.43	0.2
Non-vegetated channel/streambed	1.79	0.07
Total CDFG Impacts	6.76	0.47

Source: HELIX Environmental Planning 2012.

Note: *All areas are presented in acre(s) rounded to the nearest 0.01.

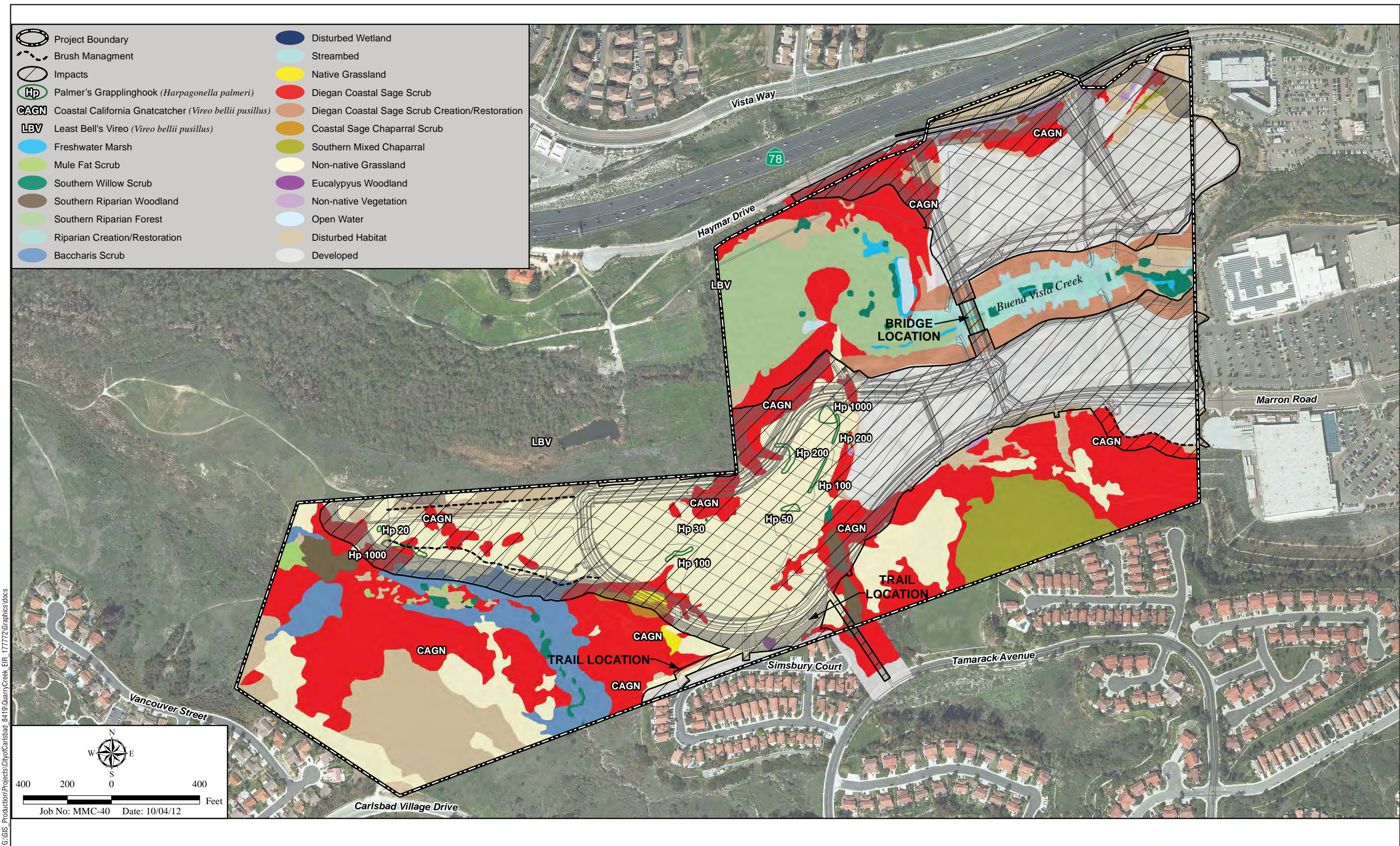
Sensitive Flora and Fauna

Sensitive Plants

As identified in the existing conditions, the project site contains approximately 2,750 Palmer's grapplinghook. Implementation of the proposed project would impact all of the Palmer's grapplinghook. Although it is a CNPS list 4.2 species, Palmer's grapplinghook is not a federally or state listed species and is not covered in the Carlsbad HMP. Therefore, impacts to Palmer's grapplinghook are considered less than significant. No mitigation is required.

Sensitive Animals

The proposed project would result in direct removal of Diegan coastal sage scrub (Group C) habitat as identified in Table 5.4-3. Seven coastal California gnatcatcher pairs were observed in the area that will be impacted as a result of grading and development of the project site (i.e., located within the limits of disturbance of the project site). One of the pair of gnatcatchers in the southeastern corner of the project site has the potential to continue to use adjacent sage scrub.



Impacts to Existing Vegetation and Sensitive Resources
FIGURE 5.4-2



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- Project Boundary
- Impacts
- Freshwater Marsh
- Mule Fat Scrub
- Southern Willow Scrub
- Southern Riparian Woodland
- Southern Riparian Forest
- Riparian Creation/Restoration
- Disturbed Wetland
- Streambed
- Non-native Vegetation
- Streambed (width in feet)



CDFG Jurisdictional Areas/Impacts
FIGURE 5.4-4

No direct take of habitat occupied by the least Bell's vireo will result from project implementation. However, impacts to non-native grassland would impact foraging habitat for the one northern harrier and white-tailed kite, as well as habitat for two San Diego black-tailed jackrabbits. Additionally, potential direct impacts to bird species covered under the MBTA could occur if brushing and grading occurs during the breeding season of most bird species (general breeding season is February 15 to August 15). These potential impacts are considered significant and require mitigation as outlined in Section 5.4.5 below. Implementation of Mitigation Measures BIO-1 through BIO-4 would reduce the impact to sensitive animals to a level less than significant.

Regional Context/Wildlife Corridors

The original HMP showed the HMP Hardline Preserve to the north of the existing alignment of Buena Vista Creek. This HMP Hardline Preserve was based on the previously approved reclamation plan that showed the realignment of the creek to the north. Based on input from the USFWS, USACE, and CDFG, the HMP Hardline Preserve Boundaries were amended through an Equivalency Finding dated October 13, 2010. This amendment allowed for the existing Buena Vista Creek channel to be retained in its original location and expanded the overall creek channel width. Additionally, the 100-foot biological buffers were incorporated into the revised HMP Hardline Preserve Boundary to maximize connectivity along Buena Vista Creek. The project includes grading within the first 20 feet of the biological buffer, which was specifically contemplated under the previous approvals for the reclamation project. Figure 3-6 in Section 3.0 of this EIR illustrates the existing HMP Hardline boundary and the proposed HMP Hardline Preserve boundary associated with the proposed project. Figure 5.4-5 depicts the existing HMP Hardline boundary compared to the proposed HMP Hardline Preserve boundary in the context of existing vegetation communities. As shown, under the proposed Master Plan's HMP Hardline Preserve boundary, the preserve area would be expanded, incorporating additional areas of sensitive vegetation that is not included in the existing HMP Hardline Preserve area.

The regional linkage that traverses the southwestern portion of the project site is shown as Hardline Preserve in the HMP. The proposed project will expand this portion of the preserve by 9.5 acres resulting in a net improvement in regional connectivity for this portion of the HMP (see Figures 3-6 and 5.4-5). The existing Hardline Preserve narrows to approximately 85 feet at its narrowest point along the southern property boundary for a distance of approximately 890 feet. The proposed project includes grading an approximate 300-foot linear distance of this pinch point and revegetating the slope with Diegan coastal sage scrub. The pinch point is then widened significantly along the western 500 feet by implementation of the project from 85 feet to approximately 300 feet in width, resulting in a net improvement in wildlife movement between the eastern open space parcel and the open space to the west. The project also proposes a trail through this area although the trail is not expected to significantly impede wildlife movement. The proposed project as designed results in an overall increase in wildlife movement functions over the current HMP Hardline Preserve. Figure 5.4-6 illustrates the approved HMP Hardline regional corridor/linkage versus the proposed Hardline. As illustrated on Figure 5.4-6, the corridor widths under the proposed Hardline would be expanded to allow for greater movement. The approved Hardline would have greater impacts to wetland habitats because of greater impacts in the western portion of the panhandle and along the south-central portion of the site. The proposed project significantly reduces impacts to existing riparian habitat over the approved HMP by 1.27 acres.

As proposed under the Master Plan, Open Space Planning Areas OS-1, a majority of OS-2, and OS-3 will constitute a habitat preserve. All fuel modification zones are not included within the HMP Preserve Hardline; however, they are identified in the Master Plan as open space. Planning Area OS-1 is intended to conserve the high steep slopes located at the south of the Reclamation parcel, and the valley and steep natural slopes located on the south half of the Panhandle parcel. Planning Area OS-2 will conserve Buena Vista Creek and its associated wetlands around its broad bend on the northwestern quarter of the

Reclamation parcel. Planning Area OS-3 will conserve the El Salto Falls and the restored Buena Vista Creek channel and environmental buffer.

Additionally, the proposed project includes the construction of a bridge across the riparian corridor associated with Buena Vista Creek that will be re-established as part of the Reclamation Plan. The proposed bridge would connect the northern and southern portions of the project site. Construction of a bridge is proposed (rather than culverts) for this crossing in order to maintain wildlife movement along Buena Vista Creek at the western end of the widened riparian corridor. No significant impacts to this local wildlife corridor would result from implementation of the bridge component of the proposed project.

Buena Vista Creek Biological Buffer

The Master Plan concept maintains the establishment of a 100-foot biological buffer, which is located on each side of Buena Vista Creek at Planning Area OS-3. This biological buffer will be planted with revegetated native upland Diegan coastal sage scrub habitat. The only uses allowed within the biological buffer are: (1) the vehicular bridge crossing; (2) underground utilities; and (3) grading which will be revegetated with native habitats. The 100-foot buffer has been established pursuant to the requirements of the Amended Reclamation Plan for the Former South Coast Materials Quarry.

5.4.3.4 Indirect Impacts

Indirect impacts that may be caused by implementation of the proposed project are associated with “edge effects.” Edge effects occur when disturbance, development, or grading traverse an undeveloped area with substantial native lands surrounding the impact area. Edge effects include human activity, invasive plant species, nuisance animal species, animal behavioral changes, night lighting, decreased water quality, and roadkill. There will also be indirect impacts associated with the construction of the bridge across Buena Vista Creek in the form of habitat shading. Additionally, the proposed project has potential to cause temporary indirect impacts due to noise and fugitive dust.

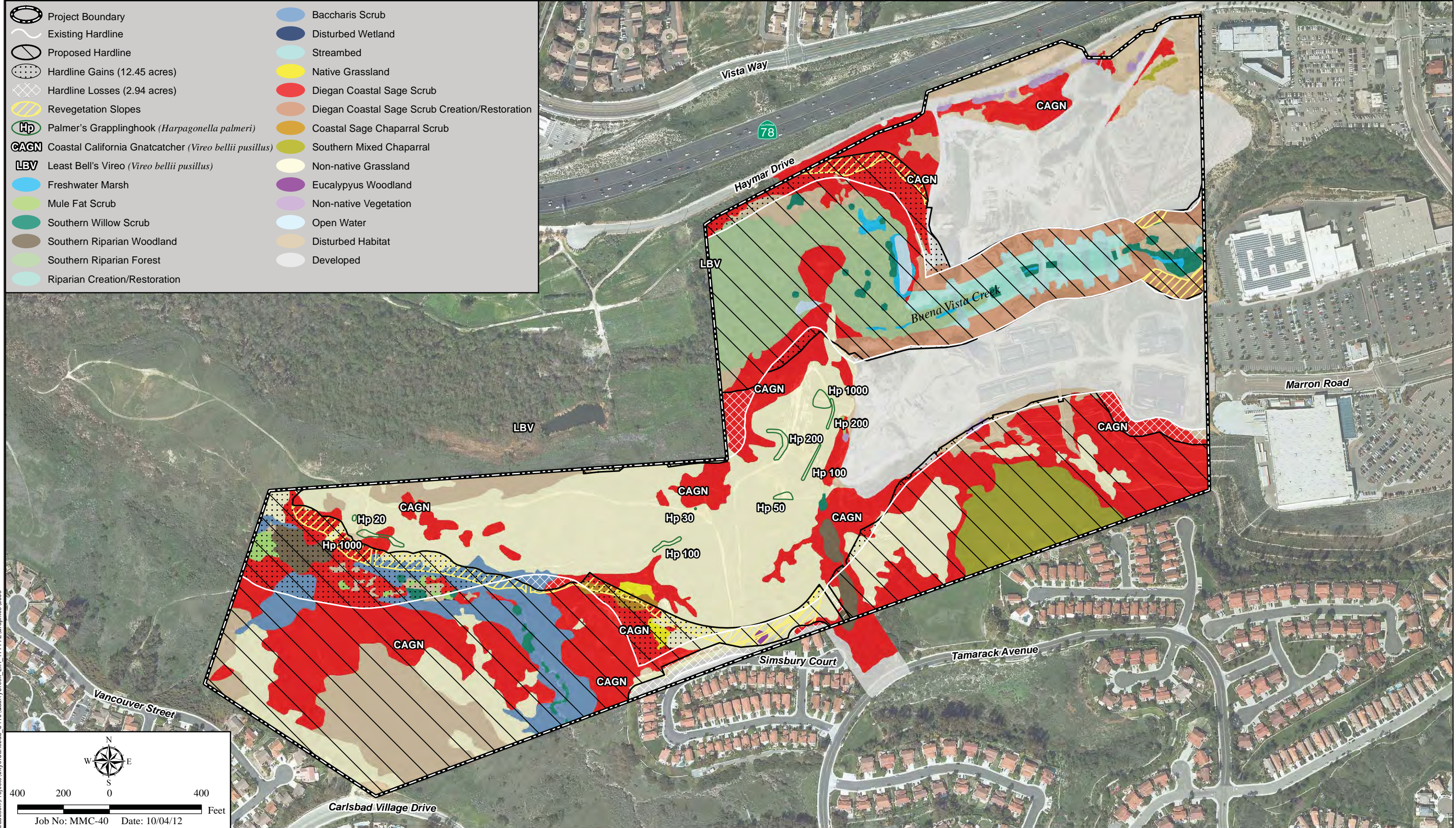
Human Activity

Increases in human activity in an area often result in degradation of sensitive vegetation by further fragmenting habitat through creation of trails, removal of existing vegetation, and illegal dumping (landscape debris, trash, and other refuse). Human activity in the adjacent habitat is proposed to be controlled through the Master Plan area by project fencing and monitoring and management requirements. However, the potential impact from human activity is considered significant and requires mitigation as outlined in Section 5.4.5 below.

Invasive Plants

Invasive plants have the potential to spread from developed or disturbed areas to adjacent native habitats. Such invasive species can displace native vegetation reducing the diversity of native habitats and potentially increasing flammability, changing ground and surface water levels, and adversely affecting native wildlife. The Master Plan includes a detailed landscape plan (see EIR Appendix B). Landscaping would occur throughout the Master Plan such as within various common areas, manufactured slopes, fuel modification zones, parking areas and pedestrian paths. No invasive plant species would be utilized in the landscaping plans. Furthermore, the Master Plan stipulates that no species on the California Invasive Plant Council (Cal-IPC) “Invasive Plant Inventory” list shall be included in the erosion control plan. The potential impact associated with the introduction of invasive plant species is considered less than significant.

- | | | | |
|--|---|--|--|
| | Project Boundary | | Baccharis Scrub |
| | Existing Hardline | | Disturbed Wetland |
| | Proposed Hardline | | Streambed |
| | Hardline Gains (12.45 acres) | | Native Grassland |
| | Hardline Losses (2.94 acres) | | Diegan Coastal Sage Scrub |
| | Revegetation Slopes | | Diegan Coastal Sage Scrub Creation/Restoration |
| | Palmer's Grapplinghook (<i>Harpagonella palmeri</i>) | | Coastal Sage Chaparral Scrub |
| | Coastal California Gnatcatcher (<i>Vireo bellii pusillus</i>) | | Southern Mixed Chaparral |
| | Least Bell's Vireo (<i>Vireo bellii pusillus</i>) | | Non-native Grassland |
| | Freshwater Marsh | | Eucalyptus Woodland |
| | Mule Fat Scrub | | Non-native Vegetation |
| | Southern Willow Scrub | | Open Water |
| | Southern Riparian Woodland | | Disturbed Habitat |
| | Southern Riparian Forest | | Developed |
| | Riparian Creation/Restoration | | |



Habitat Management Plan Hardline Comparison (Existing vs. Proposed)
FIGURE 5.4-5



Approved vs. Proposed HMP Hardline Regional Corridor/Linkage
FIGURE 5.4-6

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Nuisance Animal Species

Domesticated animals, particularly cats, are known to impact native wildlife in the habitat areas immediately adjacent to development. The proposed project has the potential to result in the introduction of domestic animals to the surrounding habitat. Project fencing and the maintenance of healthy predator populations (coyote and bobcat) will minimize introduction of domestic animals.

Brown-headed cowbirds are an invasive nest predator parasite that can greatly reduce the breeding success of native birds. This species has been reported on-site and on the adjacent property to the west in low numbers (HELIX 2012). The proposed project is not expected to significantly increase the number of brown-headed cowbirds in the surrounding habitat.

Residential uses may introduce Argentine ants to local habitats, which could have significant consequences for native ant species and animals that feed on them. Impacts from Argentine ants will be avoided by requiring the inspection of all plant material prior to use on the site. Impacts associated with nuisance animal species are considered less than significant with mitigation measures as outlined in Section 5.4.5 below.

Night Lighting

Night lighting exposes wildlife species to an unnatural light regime and may alter their behavior patterns, causing them to have lower reproductive success, and thus reducing species diversity. Exterior lighting adjacent to preserved habitat includes street lighting for proposed “Street A” could result in a potentially significant impact to wildlife and requires mitigation as outlined in Section 5.4.5 below.

Water Quality

Landscaping often results in increased runoff, which could in turn reduce water quality in riparian areas. The use of petroleum products (i.e., fuels, oils, lubricants) and erosion of land cleared during mine reclamation could potentially contaminate surface water, adversely affecting vegetation, aquatic animals, and terrestrial wildlife. However, implementation of Best Management Practices (BMPs) per the City's grading permitting requirements, as well as installation of drainage and desiltation basins as outlined in the Stormwater Management Plan would reduce potential short-term water quality impacts to below a level of significance. The Master Plan also involves specific provisions for the use of efficient landscape irrigation techniques.

During construction, BMPs would be implemented as part of the project to control erosion, sedimentation, and pollution that could impact water resources on and off-site. Prior to the commencement of grading, a Notice of Intent must be filed with the RWQCB for a NPDES General Construction Storm Water Permit. Specific permit requirements include implementation of an approved Storm Water Pollution Prevention Plan (SWPPP), which requires BMPs for erosion and sediment control related to construction activities. Please refer to Section 5.9 of this EIR for further discussion on water quality.

Roadkill

Roadkill impacts would be considered significant if they resulted in adverse effects to federally or state-listed species. Roadkill could occur as vehicles travel on the internal roads associated with the project. However, Buena Vista Creek provides the primary local wildlife movement corridor through the project site, and a bridge is proposed across the creek that would allow for relatively unimpeded wildlife

movement along the creek. The regional corridor in the southwest portion of the project site is completely avoided. Therefore, on-site roadkill impacts are anticipated to be less than significant.

Shading

The bridge crossing of Buena Vista Creek will not result in any direct impacts to riparian habitat; however, it will result in indirect impacts through shading. Indirect shading impacts total 0.2 acres of riparian habitat. These impacts are considered significant and require mitigation as outlined in Section 5.4.5 below.

Noise

Noise impacts would be considered significant if sensitive species, such as the least Bell's vireo, coastal California gnatcatcher or raptor species were displaced and failed to breed. Breeding mammals and birds may temporarily leave the project vicinity during construction activities; however, they would be expected to return afterward once the noise impact ceases, because the habitat will remain in place and would be viable for reoccupation by the displaced species. Noise levels during grading at the grading/open space interface throughout the project site would be in excess of 60 A-weighted decibels equivalent continuous noise level (dBA Leq). Such noise impacts to nesting least Bell's vireo or coastal California gnatcatcher would be considered significant and require mitigation as outlined in Section 5.4.5 below.

Fugitive Dust

Dust released during grading activities could cover vegetation in adjacent habitat areas. The resulting dust-induced shading could reduce native plant productivity, in turn displacing native vegetation, reducing diversity, encouraging weed invasion, adversely affecting wildlife, and increasing fire susceptibility. One of the project design measures requires that the monitoring biologist periodically monitor adjacent habitats for excessive amounts of dust and recommend remedial measures to address dust control if necessary. As a result, the effects of dust on surrounding vegetation are considered less than significant. No mitigation is required.

5.4.4 Level of Significance Before Mitigation

5.4.4.1 Direct Impacts

Vegetation Communities

Implementation of the proposed project would result in impacts to wetland resources, including 0.34 acres of southern riparian woodland, 0.06 acres of southern willow scrub, and 0.02 acres of mule fat scrub. The proposed project would also impact 46.1 acres of upland vegetation communities, including 13.1 acres of Diegan coastal sage scrub (0.5 acre occurs off-site), 1.1 acres of baccharis scrub, 0.2 acres of native grassland, 0.2 acres of coastal sage chaparral scrub, 0.1 acres of southern mixed chaparral, 24.6 acres of non-native grassland, 6.3 acres of disturbed habitat (0.7 acre occurs off-site), 0.4 acres of non-native vegetation (0.02 acre occurs off-site), and 0.1 acres of eucalyptus woodland. The project would also "impact" 33.8 acres of developed land, including 1.6 acres in the City of Oceanside. Impacts to southern riparian woodland, southern willow scrub, mule fat scrub, unvegetated channel, Diegan coastal sage scrub, baccharis scrub, native grassland, coastal sage chaparral scrub, southern mixed chaparral, non-native grassland, and disturbed habitat are significant.

Jurisdictional Areas

The proposed project would cause permanent impacts to both USACE and CDFG jurisdictional areas. The proposed project would cause permanent impacts to 0.21 acres of USACE jurisdictional areas consisting of unvegetated channel/streambed. Impacts to CDFG jurisdictional areas would total 0.47 acres, including 0.34 acres of southern riparian woodland, 0.04 acres of southern willow scrub, 0.02 acres of mule fat scrub, and 0.07 acres of unvegetated channel/streambed. Figure 5.4-6 illustrates impacts to CDFG jurisdictional areas. These impacts are considered significant.

Sensitive Animals

The proposed project would result in direct removal of Diegan coastal sage scrub (Group C) habitat as identified in Table 5.4-4. Seven coastal California gnatcatcher pairs were observed in the area impacted. One of the gnatcatcher pairs in the southeastern corner of the project site has the potential to continue to use adjacent sage scrub. Additionally, impacts to non-native grassland would impact foraging habitat for the one northern harrier and white-tailed kite, as well as habitat for two San Diego black-tailed jackrabbits. These potential impacts are considered significant.

Off-site Improvements

Implementation of the proposed project will require construction of off-site improvements as described in EIR Section 3.0. These improvements include the construction of sewer lines/connections, and water and reclaimed water lines/connections to serve the project, and improvements to Haymar Drive. The construction of these improvements has been included in the project's impact footprint and are covered by proposed mitigation for biological impacts discussed in Section 5.4.5 Environmental Mitigation Measures. The specific utility construction would impact non-native grasslands, coastal sage scrub, and southern riparian woodland. Also, off-site improvements include one of the project's proposed public use trailheads, which would be located at the easterly terminus of Marron Road for that portion of the road within the City of Carlsbad located east of El Camino Real (east of the Vons shopping center). This improvement would occur within an existing paved area and no biological impacts would result. In addition to utility and trailhead improvements, there will be minimal grading in the parcel immediately east of Planning Area R-1, outside of the project site boundary, within the limits of the City of Oceanside. This area is mapped as developed and does not contain sensitive biological resources. In addition, there will be some fill placed against the existing retaining wall located at the property line of the Quarry Creek Plaza shopping center in order to improve the appearance of the wall. This area is also mapped as developed and does not contain sensitive biological resources.

5.4.4.2 Indirect Impacts

Human Activity

Increases in human activity in an area often result in degradation of sensitive vegetation by further fragmenting habitat through creation of trails, removal of existing vegetation, and illegal dumping (landscape debris, trash, and other refuse). Human activity in the adjacent habitat is proposed to be controlled by project fencing and monitoring and management requirements. However, the potential impact from human activity is considered significant. Implementation of Mitigation Measures BIO-5 through BIO-7 would reduce the impact to a level less than significant.

Night Lighting

Night lighting exposes wildlife species to an unnatural light regime and may alter their behavior patterns, causing them to have lower reproductive success, and thus reducing species diversity. Exterior lighting adjacent to preserved habitat including street lighting for Street A could result in a potentially significant impact to wildlife. Implementation of Mitigation Measure BIO-5 would reduce the impact to a level less than significant.

Shading

The bridge crossing of Buena Vista Creek will not result in any direct impacts to riparian habitat; however, it will result in indirect impacts through shading. Indirect shading impacts total 0.20 acres of riparian habitat. These impacts are considered significant. Implementation of Mitigation Measure BIO-3 would reduce the impact to a level less than significant.

Noise

Noise impacts would be considered significant if sensitive species, such as the least Bell's vireo, coastal California gnatcatcher or raptor species were displaced and failed to breed. Breeding mammals and birds may temporarily leave the project vicinity during construction activities; however, they would be expected to return afterward. Noise levels during grading at the grading/open space interface throughout the project site would be in excess of 60 dBA Leq. Such noise impacts to nesting least Bell's vireo or coastal California gnatcatcher are considered significant. Implementation of Mitigation Measures BIO-5 through BIO-7 would reduce the impact to a level less than significant.

5.4.5 Environmental Mitigation Measures

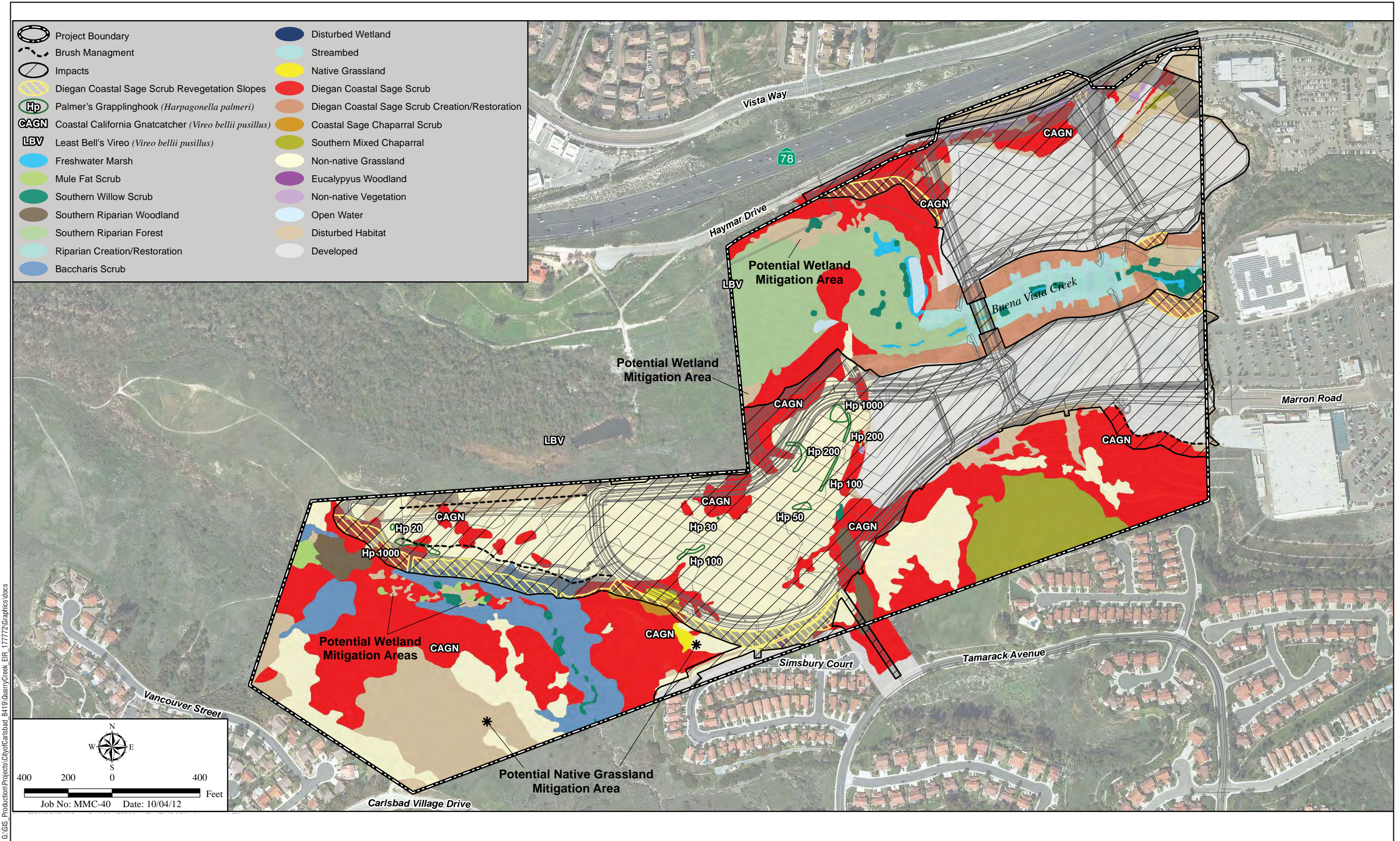
The Carlsbad HMP requires a no net loss with regards to wetland and riparian vegetation communities. Table 5.4-6 summarizes the mitigation for impacts to vegetation communities.

BIO-1 Prior to issuance of a grading permit, mitigation plans for impacts to wetland and riparian species shall be submitted to the City for approval. The following measures shall be implemented:

- Impacts to southern riparian woodland, southern willow scrub, and mule fat scrub shall be mitigated at a 3:1 ratio with a minimum 1:1 creation ratio. In total, impacts to riparian vegetation communities shall require 1.26 acres of mitigation. The proposed project shall include 0.42 acres of riparian creation, and 0.84 acres of enhancement of wetlands on-site or immediately off-site along Buena Vista Creek. Refer to Figure 5.4-7 for the proposed location of riparian creation.

Alternatively, the project may complete mitigation at an off-site location acceptable to the City and Resource Agencies.

- Impacts to 0.2 acres of native grassland shall be mitigated at a 3:1 ratio (0.6 acres) through on-site preservation of 0.1 acres of native grassland and restoration of 0.5 acres of native grassland within on-site open space.



Potential Wetland, Native Grassland and Sage Scrub Mitigation/Restoration Areas
 FIGURE 5.4-7

5.4 Biological Resources

Table 5.4-6. Mitigation for Impacts to Vegetation Communities

Vegetation Community	Habitat Group	Existing	Impacts	Required Mitigation		Proposed Preservation		
				Ratio†	Area	Preservation	Creation/ Enhancement ⁷	Total ¹
Riparian forest (61330)	A	9.39	0	3:1	0	9.39	1.26	17.04
Southern riparian woodland (62000)	A	1.34	0.34	3:1	1.02	1.00		
Riparian habitat**	A	1.94	0	3:1	0	1.94		
Southern willow scrub (63320)	A	1.34	0.06	3:1	0.18	1.28		
Freshwater marsh (52400)	A	0.46	0	3:1	0	0.46		
Mule fat scrub (63310)	A	0.43	0.02	3:1	0.06	0.41		
Non vegetated channel/ streambed	A	1.29	0	1:1	0	1.29		
Disturbed wetland	A	0.01	0	1:1	0	0.01		
Open water	B	0.38	0	3:1	0	0.38		0.38
Native grassland (42100)	B	0.3	0.2	3:1	0.6	0.1	0.5	0.6
Diegan coastal sage scrub (32500)	C	42.9	13.1	2:1	26.2	25.2 5.1 ³	4.5 ⁴	34.8 ³
Baccharis scrub (32530)	D	6.2	1.1	1:1	1.1	5.1 ²	NA	5.1
Coastal sage chaparral scrub (37G00)	D	0.4	0.2	1:1	0.2	0.2	NA	0.2
Southern mixed chaparral (37120)	D	5.1	0.1	1:1	0.1	5.0 ⁵	NA	5.0
Non-native grassland (42200)	E	34.6	24.6	0.5:1	12.3	10.0	2.3 ⁶	12.3
Eucalyptus woodland (79000)	F	0.1	0.1	0.1:1	0.01+	0	NA	0
Non-native vegetation (11000)	F	0.4	0.4	0.1:1	0.04+	0	NA	0
Disturbed habitat (11300)	F	16.5	6.3	0.1:1	0.63+	10.2	NA	6.01
Developed (12000)		35.12	33.8		0	0	NA	1.32
Total		158.2	80.32	--	42.44	77.88	0⁸	82.75¹⁷

*All areas are presented in acre(s) rounded to the nearest 0.01.

**Riparian habitat creation will be comprised of one or more of the other riparian vegetation communities present on-site.

+Mitigation for impacts to disturbed habitat would occur through payment of HMP in-lieu fees.

¹ Includes 5.1 acres restored as part of reclamation plan but not counted as mitigation.

² Includes excess of 4.0 acres not needed for mitigation.

³ Includes 5.1 acres restored as part of reclamation plan but not counted as mitigation.

⁴ Includes 4.5 acres of slope restoration for the proposed project.

⁵ Includes excess of 4.9 acres not needed for mitigation.

⁶ Shortfall of 2.3 acres will be met by on-site restoration of 2.3 acres of grassland habitat or payment of HMP in-lieu fees.

⁷ Preservation and creation do not match total because preservation only represents areas required for mitigation while total includes excess areas conserved but not required for mitigation.

⁸ Creation and enhancement totals included in preservation total.

¹⁷ Represents acres of habitat actually conserved for each habitat type. May not match "preservation" column.

- Impacts to 13.1 acres of Diegan coastal sage scrub shall be mitigated at a 2:1 ratio (26.2 acres) through on-site preservation of 25.2 acres of Diegan coastal sage scrub. The remaining 1.0 acres shall be mitigated through restoration of Diegan coastal sage scrub on-site.
- An additional 3.5 acres will be revegetated with Diegan coastal sage scrub species for erosion control purposes, and will be required to meet cover criteria for erosion control, but will not be required to meet success criteria for Diegan coastal sage scrub being used for project mitigation.
- Impacts to 0.2 acres of coastal sage chaparral scrub and 0.1 acres of southern mixed chaparral shall be mitigated at a 1:1 ratio (0.3 acres) through on-site preservation of 0.2 acres of coastal sage chaparral scrub and 0.1 acres of southern mixed chaparral.
- Impacts to 24.6 acres of non-native grassland shall be mitigated at a 0.5:1 ratio (12.3 acres). The applicant shall include preservation of 10.0 acres of non-native grassland and either payment of the in lieu fee or restoration of 2.3 acres of grassland habitat on-site.
- Impacts to 6.3 acres of disturbed habitat, 0.1 acres of eucalyptus woodland and 0.4 acres of non-native vegetation shall be mitigated at a 0.1: 1 ratio with on-site preservation of 0.68 acres southern mixed chaparral (6.8 acres of impact times 0.1).

BIO-2 Prior to issuance of a grading permit, the applicant shall submit a riparian restoration plan and a native grassland restoration plan for approval by the City of Carlsbad. The restoration plans shall include the following:

Riparian Restoration Plan

- a) All final specifications and topographic-based grading, planting, and irrigation plans (0.5 foot contours and typical cross-sections) for the creation/restoration-sites. All wetland mitigation areas shall be graded to the same elevation as adjacent existing jurisdictional wetlands areas, and/or to within one foot of the groundwater table, and shall be left in a rough grade state with microtopographic relief (including channels for wetlands) that mimics natural topography, as directed by the City and the USACE, USFWS, and CDFG (collectively referred to as “Resource Agencies”). Topsoil and plant materials salvaged from the impacted areas (including live herbaceous shrub and tree species) shall be transplanted to, and/or used as a seed/cutting source for, the riparian/wetland creation and enhancement areas to the maximum extent practicable as directed by the City of Carlsbad and Resource Agencies. Planting and irrigation shall not be installed until the City and Resource Agencies have approved of the mitigation-site grading. All plantings shall be installed in a way that mimics natural plant distribution, and not in rows;
- b) Planting palettes (plant species, size, and number/acres) and seed mix (plant species and pounds/acres). The multitude of plant palettes proposed in the draft plans shall include native species specifically associated with the habitat type(s). Unless otherwise approved by the City and Resource Agencies, only locally native species (no cultivars) obtained from as close to the project site as possible shall be used. The source and proof of local nativeness of all plant material and seed shall be provided;

- c) Container plant survival shall be 80 percent of the initial plantings for the first five years. At the first and second anniversary of plant installation, all dead plants shall be replaced unless their function has been replaced by natural recruitment;
- d) A final implementation schedule that indicates when all riparian/wetland impacts, as well as riparian/wetland creation/restoration grading, planting, and irrigation, will begin and end. Necessary site preparation and planting shall be completed during the concurrent or next planting season (i.e., late fall to early spring) after the City and Resource Agencies' approval of grading. Any temporal loss of habitat caused by delays in riparian/wetland habitat creation/restoration shall be offset through like habitat creation/restoration at a 0.5: 1 ratio for every six months of delay (i.e., 1:1 for 12 months delay, 1.5:1 for 18 months delay, etc.). In the event that the project applicant is wholly or partly prevented from performing obligations under the final plans (causing temporal losses due to delays) because of unforeseeable circumstances or causes beyond the reasonable control, and without the fault of negligence of the project applicant, including but not limited to natural disasters (e.g., earthquakes, etc.), labor disputes, sudden actions of the elements (e.g., landslide activity), or actions or inaction by federal or state agencies, or other governments, the project applicant will be excused by such unforeseeable cause(s);
- e) Five years of success criteria for wetland/riparian creation/restoration areas, including: separate percent cover criteria for herbaceous understory, shrub midstory, and tree overstory, and a total percent absolute cover for all three layers at the end of five years; evidence of natural recruitment of multiple species for all habitat types; 0 percent coverage for Cal-IPC's "Invasive Plant Inventory" species, and no more than 10 percent coverage for other exotic/weed species;
- f) A minimum of five years of maintenance and monitoring of riparian/wetland creation/restoration areas, unless success criteria are met earlier and all artificial water supply has been off for at least two years;
- g) A qualitative and quantitative vegetation monitoring plan with a map of proposed sampling locations. Photo points shall be used for qualitative monitoring and stratified-random sampling shall be used for all quantitative monitoring;
- h) Contingency measures in the event of creation/restoration failure;
- i) Annual mitigation maintenance and monitoring reports shall be submitted to the City and Resource Agencies no later than December 1 of each year; and
- j) A wetland delineation shall be performed to confirm that USACE and CDFG jurisdictional wetlands have been successfully created/restored prior to final approval of creation/restoration-sites.

Native Grassland and Diegan Coastal Sage Scrub Habitat Restoration Plan

- a) All final specifications and topographic-based grading (with 10-foot contours), planting, and irrigation plans (if irrigation is used). All upland habitat creation/restoration-sites shall be prepared for planting by decompacting the top soil in a way that mimics natural upland habitat top soil to the maximum extent practicable while maintaining slope stability. Topsoil and plant materials salvaged from the upland habitat areas to be impacted shall be transplanted to, and/or used as a seed/cutting source for, the upland habitat restoration/creation areas to the maximum

extent practicable as approved by the City of Carlsbad and the wildlife agencies. Planting and irrigation shall not be installed until the City and wildlife agencies have approved of upland habitat restoration/creation-site grading. All plantings shall be installed in a way that mimics natural plant distribution and not in rows;

- b) Planting palettes (plant species, size, and number/acres) and seed mix (plant species and pounds/acres). The upland plant palette proposed in the draft plans shall include native species specifically associated with the habitat type(s). Unless otherwise approved by the City of Carlsbad and wildlife agencies, only locally native species (no cultivars) obtained from as close to the project site as possible shall be used. The source and proof of local nativeness of all plant material and seed shall be provided;
- c) Container plant survival shall be 80 percent of the initial plantings for the first five years. At the first and second anniversary of plant installation, all dead plants shall be replaced unless their function has been replaced by natural recruitment;
- d) A final implementation schedule that indicates when all native grassland and Diegan coastal sage scrub impacts, as well as native grassland and Diegan coastal sage scrub creation/restoration grading, planting, and irrigation, will begin and end. Necessary site preparation and planting shall be completed during the concurrent or next planting season (i.e., late fall to early spring) after the City and wildlife agencies' approval of grading. Any temporal loss of habitat caused by delays in native grassland and Diegan coastal sage scrub habitat creation/restoration shall be offset through like habitat creation/restoration at a 0.5:1 ratio for every six months of delay (i.e., 1:1 for 12 months delay, 1.5:1 for 18 months delay, etc.). In the event that the project applicant is wholly or partly prevented from performing obligations under the final plans (causing temporal losses due to delays) because of unforeseeable circumstances or causes beyond the reasonable control, and without the fault of negligence of the project applicant, including but not limited to natural disasters (e.g., earthquakes, etc.), labor disputes, sudden actions of the elements (e.g., further landslide activity), or actions or inaction by federal or state agencies, or other governments, the project applicant will be excused by such unforeseeable cause(s);
- e) Five years of success criteria for native grassland creation/restoration areas, including: a total of 40-65 percent absolute cover; evidence of natural recruitment of multiple species; 0 percent coverage for Cal-IPC List A and B species, and no more than 10 percent coverage for other exotic/weed species;
- f) A qualitative and quantitative vegetation monitoring plan with a map of proposed sampling locations. Photo points shall be used for qualitative monitoring and stratified, random sampling shall be used for all quantitative;
- g) Contingency measures in the event of creation/restoration failure; and
- h) Annual mitigation maintenance and monitoring reports shall be submitted to Carlsbad and the wildlife agencies after the maintenance and monitoring period and no later than December 1 of each year.

The USACE and CDFG require no net loss of wetlands. The proposed project would cause impacts to 0.21 acres of USACE jurisdictional areas and 0.47 acres of CDFG jurisdictional areas. The following mitigation is required for impacts to USACE and CDFG jurisdictional areas.

BIO-3 Prior to the issuance of a grading permit, a mitigation plan shall submitted to the City for approval that provides mitigation for the permanent and temporary impacts to 0.21 acres of USACE jurisdictional areas and 0.47 acres of CDFG jurisdictional areas shall be accomplished through on-site mitigation at a 3: 1 mitigation to impact ratio through a combination of habitat creation at a 1: 1 ratio and restoration/enhancement at a 2:1 ratio; resulting in 0.63 acres of USACE mitigation, including at least 0.21 acres of creation and 1.41 acres of CDFG mitigation, including at least 0.47 acres of creation. The riparian creation shall occur on-site, and the remaining 0.94-acres of mitigation would occur with enhancement of wetlands on-site or immediately off-site along Buena Vista Creek. Alternatively, the project may complete mitigation at an off-site location acceptable to the City and Resource Agencies. Refer to Figure 5.4-7 for the proposed location of riparian creation on-site. Impacts to 0.2 acres of the riparian habitat due to shade shall be mitigated through on-site or off-site enhancement of 0.20 acres of disturbed riparian habitat

The following mitigation is required if project grading (other than clearing and grubbing of sensitive habitats) is necessary and adjacent to preserved on-site habitat during the bird breeding season (February 15-September 15):

BIO-4 Prior to construction activities during the avian breeding season (February 15-September 15); a qualified biologist shall conduct pre-construction surveys in the adjacent habitat for coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and nesting raptors. The survey shall begin not more than three days prior to the beginning of grading activities. The USFWS and CDFG (collectively referred to as "wildlife agencies") shall be notified if any of these species are observed nesting within 500 feet of proposed grading activities. No activities which would result in noise levels exceeding 60 dBA hourly Leq within this 500-foot buffer shall be allowed. Background noise (e.g., State Route 78 [SR-78]) shall be excluded from the 60 dBA calculation. If grading activities are not completed prior to the breeding season, and any of these species are present, and noise levels exceed this threshold, noise barriers shall be erected to reduce noise impacts to occupied habitat to below 60 dBA hourly Leq and/or the activities shall be suspended.

The proposed project may result in significant edge effects (including effects from human activity) along the western boundary of the project site, as well as along the development/open space boundaries. To reduce edge effects, on-site human activity, and potential impacts related to the introduction of exotic and domestic animals, the following mitigation is required.

BIO-5 Prior to issuance of a grading permit, the applicant shall incorporate the following measures into the grading plans, final project design, and landscaping plans:

- Temporary fencing (with silt barriers) shall be installed at the limits of project impacts (including construction staging areas and access routes) to prevent additional sensitive habitat impacts and to prevent the spread of silt from the construction zone into adjacent habitats to be avoided. Fencing shall be installed in a manner that does not impact habitats to be avoided. The applicant shall submit to the City, and the resource agencies (i.e., USACE, USFWS, and CDFG), for approval at least 30 days prior to initiating project impacts and the final plans for initial clearing and grubbing of sensitive habitat and project construction. These final plans shall include photographs that show the fenced limits of impact and all areas (including

riparian/wetland or coastal sage scrub) to be impacted or avoided. If work occurs beyond the fenced or demarcated limits of impact, all work shall cease until the problem has been remedied to the satisfaction of the City and the resource agencies. Any riparian/wetland or upland habitat impacts that occur beyond the approved fence shall be mitigated at a minimum 5:1 ratio. Temporary construction fencing shall be removed upon project completion.

- A monitoring biologist approved by the resource agencies shall be on-site during clearing and grubbing of habitat that occurs within 200 feet of the grading limits. The monitoring biologist shall conduct weekly site visits during rough grading to ensure that the grading limits have been respected. The biologist must be knowledgeable of gnatcatcher, least Bell's vireo, and flycatcher biology and ecology. The applicant shall submit the biologist's name, address, telephone number, and work schedule on the project to the City and the resource agencies at least seven days prior to initiating project impacts.
- The monitoring biologist shall periodically monitor adjacent habitats for excessive amounts of dust and shall recommend remedial measures to address dust control if necessary. The monitoring biologist shall implement a contractor training program to insure compliance with permit conditions. Any violations would be reported to the City and the wildlife agencies within 24 hours. Weekly reports will be submitted during initial clearing and grubbing, and monthly reports shall be submitted throughout the remainder of the grading of the site. A final report shall be submitted to the City and the wildlife agencies within 60 days of project completion.
- The clearing and grubbing of sensitive habitats shall occur outside of the bird breeding season (February 15 to September 15), unless a qualified biologist demonstrates to the satisfaction of the City and the wildlife agencies that all nesting is complete.

BIO-6 Prior to construction activities, the applicant shall complete the following tasks:

- A conservation easement shall be placed over those portions of the property required to meet project mitigation obligations (a conservation easement already exists over the open space previously set aside as part of the quarry reclamation effort).
- The applicant shall prepare and implement a perpetual management, maintenance, and monitoring plan (PMP) for all on-site biological conservation easement areas (a perpetual management, maintenance, and monitoring plan already exists over the open space previously set aside as part of the quarry reclamation effort). The applicant shall also establish a non-wasting endowment or other satisfactory financing mechanism for an amount approved by the City and resource agencies based on a Property Analysis Record (PAR; Center for Natural Lands Management 1998) or similar cost estimation method to secure the ongoing funding for the perpetual management, maintenance, and monitoring of the biological conservation easement area by an agency, non-profit organization, or other entity approved by the City and resource agencies. The applicant shall submit a draft plan including: (1) a description of perpetual management, maintenance, and monitoring actions and the PAR or other cost estimation results for the non-wasting endowment; and (2) proposed land manager's name, qualifications, business address, and contact

information to the resource agencies for approval at least 30 days prior to initiating project impacts. Upon approval of the draft plan, the applicant shall submit the final plan to the City and resource agencies and a contract with the approved land manager, as well as transfer the funds for the non-wasting endowment to a non-profit conservation entity, within 60 days of receiving approval of the draft plan.

BIO-7 Concurrent with construction activities, the applicant shall complete the following tasks:

- Employees shall strictly limit their activities, vehicles, equipment, and construction materials to the fenced project footprint.
- To avoid attracting predators of the gnatcatcher, vireo, and flycatcher, the project site shall be kept as clean of debris as possible during project grading. All food-related trash items shall be enclosed in sealed containers and regularly removed from the site.
- Pets of project personnel shall not be allowed on the project site during grading.
- Disposal or temporary placement of excess fill, brush, or other debris shall not be allowed in waters of the U.S. or their banks.
- All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas outside of waters of the U.S. within the fenced project impact limits. These designated areas shall be located in previously compacted and disturbed areas to the maximum extent practicable in such a manner as to prevent any runoff from entering waters of the U.S., and shall be shown on the construction plans. Fueling of equipment shall take place within existing paved areas greater than 100 feet from waters of the U.S.
- Contractor equipment shall be checked for leaks prior to operation and repair, as necessary. “No fueling zones” shall be designated on construction plans.
- No species on the Cal-IPC “Invasive Plant Inventory” list shall be included in the project landscaping plans.
- The biological monitor shall inspect landscaping elements proposed to be installed within the Master Plan for the presence of Argentine ants. Any landscaping containing Argentine ants shall be rejected from being installed within the Master Plan area.
- All exterior lighting adjacent to preserved habitat shall be of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from preserved habitat to the maximum extent practicable.
- All planning areas adjacent to preserved habitat shall have non-reflective windows to minimize bird strike issues.

5.4.6 Level of Significance After Mitigation

Sensitive Vegetation Communities and Jurisdictional Areas

Impacts to sensitive vegetation communities and jurisdictional areas will be mitigated to a level below significance through implementation of Mitigation Measures BIO-1 through BIO-3.

Sensitive Animals

Consistent with the Carlsbad HMP, mitigation of impacts to sensitive animal species will be met through on-site preservation of habitats capable of supporting these species as outlined in Mitigation Measures BIO-1 through BIO-3. Potential impacts to sensitive avian species during breeding season will be mitigated to a level below significance through implementation of Mitigation Measure BIO-4.

Potential Edge Effects

Implementation of Mitigation Measures BIO-5 through BIO-7 would reduce potential impacts associated with edge effects, on-site human activity, and introduction of exotic and domestic animals to a level below significance.